Massachusetts Port Authority
Sustainable Design Standards and Guidelines

AAPA Annual Convention
Galveston, TX
October 28, 2009
Overview of Massachusetts Port Authority

- Independent State Authority
- Governor appoints Board
- Self-financing (i.e. no tax revenue)

Primary Massport facilities:

- Logan International Airport
- Port of Boston
- Tobin Bridge
- Major waterfront land holdings
Massport’s Maritime Operations

Conley Container Terminal

Black Falcon Cruise Terminal

Boston Autoport

Boston Fish Pier

Massport Marine Terminal
Massachusetts Port Authority’s Strategic Vision for the Port of Boston

- Increase the amount of foreign and domestic water-borne commerce (primarily containers) through the Port of Boston
- Develop facilities and related access infrastructure to support growth in key business lines
- Develop other Maritime properties to support core businesses and provide financial return to make capital investments in port facilities
- Operate in a fiscally, environmentally and socially sustainable manner
Massport Sustainability Initiatives and Programs

- Corporate Environmental Management Policy
- Authority-wide sustainability strategy in development
- Baseline inventory of Massport’s port-related emissions underway
- Conley Terminal EMS and ISO 14001 Certification since 2003
- Shore power at Fish Pier, tug and cement berths
- Extensive Recycling Programs – including seafood processing waste and used fishing gear
- Incorporate “green” lease terms in new agreements
- Extensive public parks and green spaces managed by Maritime Dept.
- Voluntary compliance with “LEED Plus” green building requirements
- Redevelopment of underutilized and brownfield properties
- Longstanding social responsibility and community involvement programs

**NEW! Sustainable Design Standards and Guidelines (SDSG)**
The SDSG is...

- A LEED-like certification program that includes:
  - performance standards and guidelines for sustainable design
  - an implementation process
  - a documentation system to track progress and determine certification level

- Required to be used by all architects, engineers and planners to consistently integrate sustainable techniques and practices into all of Massport’s capital projects

- Intended to provide innovative guidance for sustainable design that goes beyond existing programs for buildings (i.e. LEED), specifically to include non-building projects that are typical for the port industry.
SDSG Overview, cont’d

- Developed by an interdepartmental Sustainability Working Group
- Tailored to Massport’s needs, but transferrable to other ports
- Table-top exercises and implementation on current projects demonstrate that the SDSG is practical, implementable and will yield measurable benefits
- Currently being implemented on 6 port projects:
  - Coastal Oil Property Acquisition and Remediation
  - Rehab of Existing Cranes at Conley Container Terminal
  - Conley Heavy Duty Pavement Rehabilitation
  - Additional Conley Dock Cranes
  - Refrigerated Container Racks at Conley
  - Tractor Replacement
SDSG Framework

- 7 categories of performance standards
- 49 performance standards in total
- All Capital Projects must achieve a minimum rating of ‘Certified’
- Rating System:

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<tr>
<th>Level</th>
<th>% of applicable points</th>
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<tbody>
<tr>
<td>Certified</td>
<td>40-55%</td>
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SDSG Categories

1. General
2. Project Site Design
3. Project Materials
4. Energy Management and Efficiency
5. Air Emissions
6. Water Management, Quality, and Efficiency
7. Indoor Air Quality & Occupant Comfort

Each Category has 3-10 performance standards...
SDSG Performance Standards

Each performance standard addresses:

- Intent
- Benefits
- Required for Credit
- Additional Credits
- Required Documentation
- Strategies

Example for Material Durability, 1 of 10 performance standards for Project Materials category:

- Material Durability
  - Intent
    - Maximize durability of materials to minimize maintenance and replacement and maximize material life
  - Benefits
    - Reduced life-cycle-costs
    - Reduced solid waste over the project lifecycle
    - Reduced operational disruptions due to maintenance and replacement
  - Required for Credit
    - Evaluate and prioritize materials based on lifespan and lifecycle maintenance costs
    - Develop life-cycle-cost analysis for project materials
  - Required Documentation
    - Life-cycle-cost analysis for project
    - List of materials evaluated based on lifespan and lifecycle maintenance costs. Note materials chosen for incorporation into the project. Provide justification for highly rated materials not chosen for the project.
  - Strategies
    - Avoid products that require frequent replacement or maintenance
    - Prioritize materials that can be recycled
    - Evaluate state-of-the-art materials and best practices
    - Adjust standard capital project budget estimating norms to account for higher material first costs, if applicable.
**SDSG Implementation**

1. Determine sustainability goals
   - What level rating can the project achieve?
   - Which performance standards will be included in the design?
   - Are there any additional points that could be achieved with an Innovation Worksheet?

2. Keep on target
   - Fill out the Rating Sheet at the beginning of the design process
   - Revise the rating sheet and innovation worksheets at 30%, 60% and 90% design stages

3. Massport designates final rating
   - Provide documentation for approval
SDSG Implementation - Rating Sheet

- Mark whether each performance standard applies to the project
- Mark performance standards included in the design as “achieved”
- Calculate projected rating
- Revise at 30%, 60% and 90% stages or if project changes
- Use Rating Sheet to stay on target for desired rating
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Purpose is to encourage “thinking outside the box”

Three ways to use the innovation worksheets:
1. Innovation not included in SDSG
2. Exceeding requirements
3. Meeting intent without meeting exact requirements
In Conclusion …

Massport’s new Sustainable Design Standards and Guidelines will:

1. Maximize the environmental, social and economic benefits of Massport’s capital projects;
2. Allow measurement of sustainability performance so that progress can be communicated, knowledge transferred and gaps identified; and
3. Encourage the development and implementation of cutting-edge technologies.